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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,375	09/25/2003	Dean M. Homan	20.2848	2374
23718	7590	06/20/2005	EXAMINER	
SCHLUMBERGER OILFIELD SERVICES 200 GILLINGHAM LANE MD 200-9 SUGAR LAND, TX 77478			WHITTINGTON, KENNETH	
			ART UNIT	PAPER NUMBER
			2862	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/605,375

Applicant(s)

HOMAN ET AL.

Examiner

Kenneth J. Whittington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25,27-38 and 40-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-25, 27-30, 32-38, 40-43, 45 and 46 is/are rejected.
- 7) ☒ Claim(s) 15, 31 and 44 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
Bot Ledynh  
Primary Examiner

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

The Amendment filed May 1, 2005 has been entered and considered.

5                    ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10                    Claims 1-7, 11-13, 16-22, 28, 29, 32-35, 40-42, 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair (US 5,233,522) in view of Issenmann (US 4,684,946).

                  Regarding claims 1-6, 11-13, 16, 18-21, 28, 29, 32, 34, 40-42 and 45, Sinclair discloses a borehole tool having several sensors (antennae) thereon and comprising:

15                    a composite body comprising a sleeve housing the sensors therein and protecting the sensors from fluid in the borehole that is transparent to the EM signals and is conductive to pass electric current from the housing to the inner core of the tool (See Sinclair FIG. 7, item 90 and col. 12, line 52 to col. 13,  
20                    line 10),

                  the shell having the uniform conductive surface along with a conductor to short electrical currents near the source or sensor (See FIG. 7, items 90, 91 and 88).

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However, Sinclair does not explicitly teach the composite body having a plurality of layers. Issenmann teaches an outer conductive sleeve antenna with an insulating second sleeve contacting the inner surface of the sleeve, and a support collar sleeve contacting the inner surface of the insulating sleeve, 5 such sleeves being transparent to EM radiation and having openings therein for a conductive member to pass therethrough (See Issenmann FIGS. 2 and 4, items 12 and 14 and col. 5, line 53 to col. 7, line 39). It would have been obvious to apply the 10 inner insulating sleeve and inner support sleeve as taught by Issenmann to the conductive sleeve as taught by Sinclair, the combination thus teaching the composite body having a plurality of layers. One having ordinary skill in the art would have been motivated to do so to prevent leakage from the conductive metal 15 outer sleeve to particular inner electrical components, while at the same time, passing current through a conductor to other particular inner components (See Issenmann same paragraphs), and to provide a support for the composite body and the borehole tool (See Issenmann same paragraphs).

20 Regarding claims 7, 17, 22, 33, 35 and 46 the sleeve of Sinclair includes a composite material including woven glass impregnated with an epoxy composition containing carbon and graphite materials.

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Claims 8-10, 23, 24, 36 and 37 rejected under 35 U.S.C.

103(a) as being unpatentable over Sinclair in view Issenmann as applied above, and further in view of Levin (US 4,590,122).

5 Sinclair in view of Issenmann teaches the limitations of claims 1, 18 and 34 as discussed above. However, while this combination discloses the use of carbon or graphite in various forms in the composite for the sleeve, it does not disclose the particular structural features or procedural steps to make the  
10 composite. Levin teaches it is well known in the art to use highly conductive carbon or graphite in woven fabrics or layers, one or more layers being used in composite materials (See Levin col. 1, line 7 to col. 2, line 17). It would have been obvious to make the composite sleeve of the noted combination in the  
15 manner having the internal structures discussed in Levin. One having ordinary skill in the art would have been motivated to do so produce a structural material having high strength, light weight, high resistance to fatigue or failure and corrosion resistance (See Levin same portion).

20

Claims 14, 30 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair in view of Issenmann as discussed above, and further in view of Estep et al. (US

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6,712,146). Sinclair in view of Issenmann teaches the features of claims 1, 13, 18, 19, 34 and 40 as discussed above. However, this combination does not explicitly disclose a recess on the inner surface of the sleeve. Estep et al. teaches a recess on the inner surface of the outer member having locking members therein (See Estep et al. FIGS. 3-6, recesses 93 and locking members 132). It would have been obvious to incorporate a recess and locking member as taught by Estep et al. into the conductive sleeve and disc members as taught by the noted combination. One having ordinary skill in the art would have been motivated to do so to provide a cam surface and locking groove in the outer sleeve for acceptance of the locking member to prevent transverse movement of the inner core members with respect to the outer sleeve (See Estep et al. col. 7, line 6 to col. 8, line 19).

Claims 25, 27 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair in view of Issenmann as discussed above, and further in view of Minerbo et al. (US 6,304,086). Sinclair in view of Issenmann teaches the features of claims 18 and 34 as noted above and a system using multiple antennae. However, Sinclair in view of Issenmann does not explicitly teach orienting the antenna off parallel. Minerbo et

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al. teaches orienting multiple antennae off parallel (See Minerbo et al. FIGS. 6, 9 and 10). It would have been obvious to reorient the antennae as taught by Minerbo et al. One having ordinary skill in the art would have been motivated to do so to  
5 provide directional measurements of the tool axis and direction information regarding the layers around the tool axis (See Minerbo et al. col. 17, lines 23-40 and col. 18, lines 19-62).

***Allowable Subject Matter***

10 Claims 15, 31 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication  
15 of allowable subject matter: the prior art does not disclose a conductive element disclosed in the recess of composite body, in combination with the other features of the claims.

***Response to Arguments***

20 Applicant's arguments filed May 1, 2005 have been fully considered but they are not persuasive. It is noted that Applicant has only addressed the 102 rejection of the claims in view of Sinclair, namely that Sinclair does not teach a

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plurality of layers. However, Issenmann teaches a modification of Sinclair as outlined above to arrive at the claims; and accordingly, the combination renders the claims obvious.

Applicant has not addressed any of the other rejections.

5

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is  
10 reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS  
15 of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated.  
20 from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



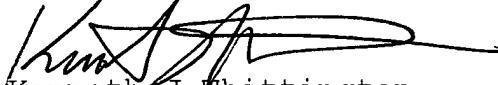
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-  
5 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is  
10 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status  
15 information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Kenneth J Whittington  
Examiner  
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kjw